

2001 Existing Land Use Inventory

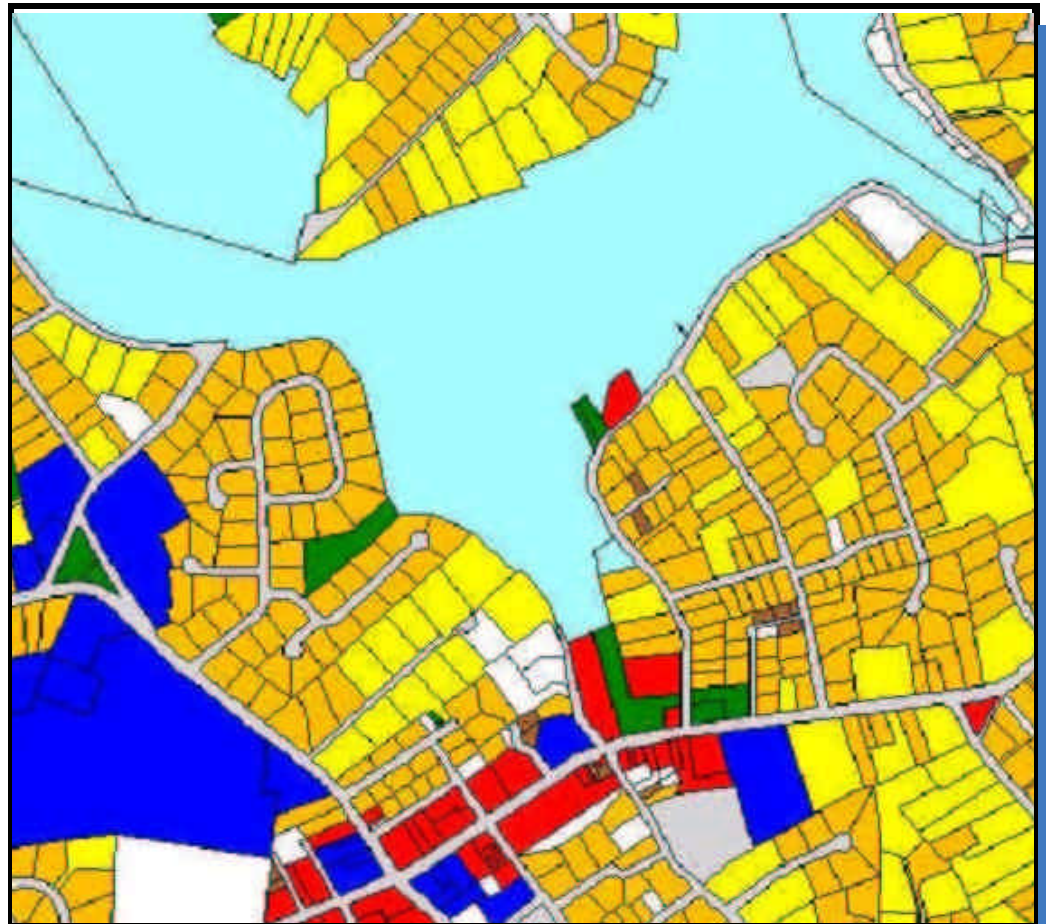
Long Island Sound Study

Suffolk County

North Shore Watershed Management Program



April 2004



Suffolk County Department of Planning

Suffolk County # New York

2001 EXISTING LAND USE INVENTORY
Long Island Sound Study
Suffolk County North Shore Watershed Management Program

April 2004

Suffolk County Department of Planning
H. Lee Dennison Building - 4th Floor
100 Veterans Memorial Highway
P.O. Box 6100
Hauppauge, New York 11788

This publication is on the Internet at
<http://www.co.suffolk.ny.us/webtemp3.cfm?dept=11&id=1080>

Suffolk County Planning Commission

Robert Martin - *Town of Smithtown*
ACTING CHAIRMAN

Louis Dietz - *Town of Babylon*
VICE CHAIRMAN

Vacant
SECRETARY

Vacant - *Town of Brookhaven*
Thomas M. Thorsen - *Town of East Hampton*
John Caracciolo - *Town of Huntington*
Frank A. Tantone - *Town of Islip*
Richard M. O'Dea - *Town of Riverhead*
Vacant - *Town of Shelter Island*
Vacant - *Town of Southampton*
William Cremers - *Town of Southold*
Laure C. Nolan - *Village over 5,000 population*
Richard London - *Village under 5,000 population*
Linda B. Petersen - *At Large*
Vacant - *At Large*
Vacant - *At Large*

Suffolk County Department of Planning

Thomas A. Isles, AICP
DIRECTOR OF PLANNING

REPORT PREPARATION
Ronald Verbarg
Principal Planner

PARTICIPATING STAFF

DeWitt S. Davies, Ph. D.
Chief Environmental Analyst

Carl Lind
Cartographer

Lauretta R. Fischer
Principal Planner

James Daly
Assistant Cartographer

Peter K. Lambert
Senior Planner

Thomas Frisenda
Computer Graphics Mapping Specialist

Carol E. Walsh
Principal Research Analyst

Vincent Leogrande
Land Management Specialist I

Suffolk County Department of Planning
Hauppauge, New York
April 2004

Table of Contents

INTRODUCTION	1
Background	1
Previous Land Use Studies	1
Study Objectives	1
METHODOLOGY	3
Data Management and Scale	3
Land Use Classification System	3
Land Use Study Area Boundaries	9
Land Use Inventory Process	9
Land Use Classification Conventions	10
Existing Land Use Map Accuracy	11
Time Frame	12
RESULTS OF THE LAND USE INVENTORY	13
REFERENCES	15

List of Tables and Maps

Table 1. Land Use Classification System for Suffolk County	4
Table 2. Upland Acreage and Number of Parcels in Towns within the LIS-SC North Shore Watershed	13
Table 3. Upland Land Use Acreage by Town for LIS-SC North Shore Watershed - 2001	14

INTRODUCTION

Background

The Long Island Sound Study (LISS) was initiated in 1985 by a partnership between the federal government and the states of Connecticut and New York. In 1987, the Long Island Sound (LIS) was designated an “Estuary of National Significance” under the National Estuary Program (NEP). The NEP is conducted under the auspices of Section 320 of the Clean Water Act to protect nationally significant estuaries from pollution, development, and overuse.

In 1998, the LISS adopted a Total Maximum Daily Load (TMDL) for nitrogen to achieve water quality standards for dissolved oxygen in the LIS. The TMDL, which received final approval from the USEPA in 2001, calls for a 58.5 percent reduction in anthropogenic nitrogen inputs into the Sound by 2014. The TMDL will be applied in all 11 management zones defined by the LISS. Management Zone 11 is the LIS watershed in Suffolk County, within which the TMDL specifies a reduction of 205 tons of nitrogen/year. Nineteen percent of this reduction is to come from non-point source nitrogen loads.

The *Suffolk County North Shore Watershed Management Program* was initiated because Suffolk County is unable to meet the nitrogen reduction requirements of the LISS TMDL by controlling point sources alone. Thus, New York State recognized the need to conduct a comprehensive watershed study considering land use management, stormwater runoff, and non-point source pollution, and awarded funding to SCDHS for this program. To support the watershed study, SCDHS established a water quality monitoring program in the North Shore Embayments in 1997, and a countywide three-dimensional groundwater model was developed. In addition a subcontract was awarded to the Suffolk County Planning Department (SCPD) to perform an analysis of existing land use, land available for development, and population in the study area. Another was awarded to the Suffolk County Soil and Water Conservation District (SWCD)/Natural Resources Conservation Service (NRCS) to estimate runoff and delineate stormwater runoff-contributing areas for the priority subwatersheds. This report on existing land use is the first of three reports being

prepared by the SCPD. The two other SCPD reports will discuss the land available for development, and the existing and saturation population in the study area.

The objective of the *Suffolk County North Shore Watershed Management Program* is to conduct a watershed management study for the Suffolk County portion of the LISS drainage area, focusing in detail on the specific subwatersheds of the Huntington Bay-Northport Harbor complex, the Nissequogue River, and Stony Brook, Port Jefferson, and Mount Sinai Harbors. This study will develop plans to attain the nitrogen TMDL by reducing nitrogen inputs into these target watersheds. The drainage basins for these waters have been identified as priorities for local management by the LISS.

Previous Land Use Studies

Existing land use maps and tabulations of land use acreage data on a town-wide basis for the four towns in the Suffolk County north shore embayment watershed (Huntington, Smithtown, Brookhaven and Islip) are available that reflect conditions in 1962 (Suffolk County Dept. of Planning 1962), 1966 (Nassau-Suffolk Regional Planning Board 1968) and 1981 (Long Island Regional Planning Board 1982). These studies, conducted on a County-wide basis, are useful in that they provide a general picture of the location and interrelationships of major land use types at different times in the past. However, each of these studies differs with respect to the methodology employed to classify categories of land use, the scale of the base maps used, the level of effort and techniques employed in verifying land use, the extent to which mapped land uses have been generalized, and how acreage figures were generated. Therefore, comparison of the results of these inventories to determine accurate trends is invalid.

Study Objectives

The objectives of this land use inventory are as follows:

- Establish an accurate GIS existing land use data base at tax map scale (i.e., large scale) for the north shore embayment watershed within Suffolk County. This data base should be prepared using a

2001 EXISTING LAND USE INVENTORY

Long Island Sound Study - Suffolk County North Shore Watershed Management Program

consistent approach so that the results are comparable among the various municipal jurisdictions involved.

- Prepare a GIS existing land use map in digital and print formats for that portion of each township
- Quantify existing land use acreage by general category and municipal jurisdiction.

within the study area boundary.

METHODOLOGY

Data Management and Scale

The Suffolk County Planning Department's GIS was employed to link land use data with parcels shown on the Suffolk County Real Property Tax Map. The Department's GIS consists of the following:

- ESRI's ArcGIS 8.3, ArcView 3.2 and GIS software
- Dell Poweredge 6300 dual processor Windows NT server with 1 gigabyte of RAM and 50 gigabytes of storage
- HP 1055cm color inkjet plotter
- Calcomp 9500 digitizer
- Four Windows 2000 workstations, each with 768K RAM and 40 gigabytes storage

Backup copies of all hard copy maps are archived in a ArcGIS.mxd format and Adobe Acrobat PDF on a DLT tape format. To access digital maps on a PC running ArcView requires 64 megabytes of RAM and 8 gigabytes of storage. Land use data were collected at tax map scale. Tax map parcel boundaries were not altered in any way by GIS manipulation. This preserved the sanctity of the parcel line work and land use data base. The extent to which small parcels can be visually distinguished depends on the scale selected for GIS map plotting. The hard copy map contained in this report depicting land use in each of the towns within the study area boundary is constrained by the 11" x 17" format. This report, with its color land use map, is on the Suffolk County Government website

(<http://www.co.suffolk.ny.us/webtemp3.cfm?dept=11&id=1080>). The online map can be magnified to any scale and printed.

Land Use Classification System

Use of town tax assessor code data expedited the attainment of land use inventory objectives. These data sets were available in electronic format and keyed to Suffolk County tax map parcels. They provided a starting point for the land use inventory work.

Tax assessor codes are assigned to parcels for the purpose of raising revenue through real property taxation. There are literally scores of codes assigned to ratable property. To facilitate interpretation, the land use methodology grouped these codes under the following 13 general land use categories that are commonly used for regional planning purposes: low density residential (≤ 1 d.u./acre), medium density residential (>1 to <5 d.u./acre), high density residential (≥ 5 d.u./acre), commercial, industrial, institutional, recreation and open space, agriculture, vacant, transportation, utilities, waste handling and management, and surface waters. Table 1 shows the general land use categories and the property type classification and ownership codes assigned to each category. The groupings in this table do not necessarily reflect the divisions in the assessor's manual (New York State Division of Equalization and Assessment 1991). The 13 general land use categories are more suitable for characterizing community layout and function, determining land available for development, estimating future population levels and preparing master plans. Each and every parcel on the tax map was assigned to one (and only one) of the general categories.

2001 EXISTING LAND USE INVENTORY

Long Island Sound Study - Suffolk County North Shore Watershed Management Program

Table 1. Land Use Classification System for Suffolk County (1 of 5)

**Low Density Residential (≤ 1 d.u./acre)* -
attribute code 1 - symbol #83- yellow****

- 210 One Family Year-Round Residence
- 220 Two Family Year-Round Residence
- 230 Three Family Year-Round Residence
- 240 Rural Residence with Acreage
- 250 Estate
- 260 Seasonal Residences
- 270 Mobile Home
- 312 Residential Land Including a Small Improvement (not used for living accommodations)
- 316 Waterfront Vacant Land Including a Small Improvement (not used for living accommodations)
- 439 Small Parking Garage
- 483 Converted Residence

**Medium Density Residential (>1 to <5 d.u./acre)*
attribute code 2- symbol #84- gold****

- 210 One Family Year-Round Residence
- 220 Two Family Year-Round Residence
- 230 Three Family Year-Round Residence
- 260 Seasonal Residences
- 270 Mobile Home
- 312 Residential Land Including a Small Improvement (not used for living accommodations)
- 316 Waterfront Vacant Land Including a Small Improvement (not used for living accommodations)
- 439 Small Parking Garage
- 483 Converted Residence

**High Density Residential (≤ 5 d.u./acre)* -
attribute code 3- symbol #92- peru****

- 210 One Family Year-Round Residence
- 220 Two Family Year-Round Residence
- 230 Three Family Year-Round Residence
- 260 Seasonal Residences
- 270 Mobile Home
 - 271 Multiple Mobile Homes
- 280 Multiple Residences
- 312 Residential Land Including a Small Improvement (not used for living accommodations)
- 316 Waterfront Vacant Land Including a Small Improvement (not used for living accommodations)
- 410 Living Accommodations
 - 411 Apartments
 - 416 Mobile Home Parks (trailer parks, trailer courts)
- 439 Small Parking Garage
- 483 Converted Residence

*Parcels designated as residential require lot size calculation to determine residential density classification (low, medium or high density).

The symbol # and color assigned to each land use category were selected from the shadeset of **Colornames in ARC/INFO Ver 7.04.

Table 1. Land Use Classification System for Suffolk County (2 of 5)

Commercial -

attribute code 4- symbol #110- red**

- 414 Hotel
- 415 Motel
- 417 Camps, Cottages, Bungalows
- 418 Inns, Lodges, Boarding & Rooming Houses,
Tourists Homes, Fraternity & Sorority Houses
- 420 Dining Establishments
 - 421 Restaurants
 - 422 Diners & Luncheonettes
 - 423 Snack Bars, Drive-Ins, Ice Cream Bars
 - 424 Night Clubs
 - 425 Bar
 - 426 Fast Food Franchises
- 430 Motor Vehicle Services
 - 431 Auto Dealers - Sales & Svc.
 - 432 Service & Gas Stations
 - 433 Auto Body, Tire Shops, Other Related
Auto Sales
 - 434 Automatic Car Wash
 - 435 Manual Car Wash
 - 436 Self-Service Car Wash
 - 437 Parking Garage
 - 438 Parking Lot
- 450 Retail Services
 - 451 Regional Shopping Centers
 - 452 Area of Neighborhood Shopping Centers
 - 453 Large Retail Outlets
 - 454 Large Retail Food Stores
 - 455 Dealerships - Sales & Services (other
than auto with large scale operation)
- 460 Bank & Office Buildings
 - 461 Standard Bank/Single Occupant
 - 462 Drive-in Branch Bank
 - 463 Bank Complex w Office Bldg
 - 464 Office Building
 - 465 Professional Building
- 470 Miscellaneous Services
 - 471 Funeral Homes
 - 472 Dog Kennels, Veterinary Clinics
 - 473 Greenhouses (retail sales)
 - 474 Billiards

- 481 Downtown Row Type (with common
wall)
- 482 Downtown Row Type (detached)
- 484 One Story Small Structure
- 485 One Story Small Structure - Multi-
occupant
- 486 Minimart
- 510 Entertainment Assembly
 - 511 Legitimate Theaters
 - 512 Motion Picture Theaters
 - 513 Drive-in Theaters
 - 514 Auditoriums, Exhibition & Exhibition
Halls
 - 515 Radio, T.V. & Motion Picture Studios
- 520 Sports Assembly
 - 521 Stadiums, Arenas, Armories, Field
Houses
 - 522 Racetracks
- 530 Amusement Facilities
 - 531 Fairgrounds
 - 532 Amusement Parks
 - 533 Game Farms
 - 534 Social Organizations
- 540 Indoor Sports Facilities
 - 541 Bowling Centers
 - 542 Ice or Roller Skating Rinks
 - 543 YMCAs, YWCAs, etc.
 - 544 Health Spas
 - 545 Indoor Swimming Pools
 - 546 Other Indoor Sports
- 550 Outdoor Sports Activities
 - 554 Outdoor Swimming Pools
 - 555 Riding Stables
 - 556 Ice or Roller Skating Rinks
 - 557 Other Outdoor Sports
- 570 Marinas
- 583 Resort Complexes
- 691 Professional Associations

****The symbol # and color assigned to each land use category were selected from the shadeset of **Colornames** in ARC/INFO Ver 7.04.**

480 Multiple Use of Multi purposes

2001 EXISTING LAND USE INVENTORY

Long Island Sound Study - Suffolk County North Shore Watershed Management Program

Table 1. Land Use Classification System for Suffolk County (3 of 5)

Industrial -

attribute code 5- symbol #127- purple**

- 440 Storage, Warehouse & Distribution Facilities
 - 441 Gasoline, Fuel, Oil, Liquid Petroleum Storage and/or Distribution
 - 442 Bottled Gas, Natural Gas Facilities
 - 443 Grain & Feed Elevators, Mixers, Sales Outlets
 - 444 Lumber Yards, Sawmills
 - 445 Coal Yards, Bins
 - 446 Cold Storage Facilities
 - 447 Trucking Terminals
 - 448 Piers, Wharves, Docks & Related Facilities
 - 449 Other Storage, Warehouse & Distribution Facilities
- 475 Junkyards
- 710 Manufacturing & Processing
- 720 Mining and Quarrying
 - 721 Sand & Gravel
- 740 Industrial Product Pipelines (non-utility companies)
 - 741 Gas
 - 742 Water
 - 743 Brine
 - 744 Petroleum Products
 - 749 Other

Institutional -

attribute code 6- symbol #45- deep sky blue**

- 610 Education
 - 611 Libraries
 - 612 Schools
 - 613 Colleges & Universities
 - 614 Special Schools & Institutions
 - 615 Other Educational Facilities
- 620 Religious
- 630 Welfare
 - 631 Orphanages
 - 632 Benevolent & Moral Associations
 - 633 Homes for the Aged
- 640 Health
 - 641 Hospitals
 - 642 All Other Health Facilities
- 652 Office Building (Government)
- 653 Parking Lots (associated with government building)
- 660 Protection
 - 661 Army, Navy, Air Force, Marine & Coast Guard installations, Radar, etc.
 - 662 Police & Fire Protection, Electrical Signal Equipment & Other Facilities for Fire, Police, Civil Defense, etc.
- 670 Correctional
- 680 Cultural and Recreational
 - Cultural Facilities (museums, art galleries)
 - 681 galleries)
- 693 Indian Reservations
- 694 Animal Welfare Shelters

The symbol # and color assigned to each land use category were selected from the shadeset of **Colornames in ARC/INFO Ver 7.04.

Table 1. Land Use Classification System for Suffolk County (4 of 5)

Recreation & Open Space -

attribute code 7- symbol #70- green**

- 190 Fish, Game & Wildlife Preserves
- 552 Public Golf Courses
- 553 Private Golf Country Clubs
- 560 Improved Beaches
- 580 Camps, Camping Facilities and Resorts
 - 581 Camps
 - 582 Camping Facilities
- 590 Parks
 - 591 Playgrounds
 - 592 Athletic Fields
 - 593 Picnic Grounds
- 682 Nature Trails, Bike Paths, etc.
- 695 Cemeteries
- 920 Private Hunting & Fishing Clubs
- 930 State Owned Forest Land
 - 932 State Owned Land Other Than Forest Preserve
- 940 Reforested Land & Other Related Conservation Purposes
 - 941 State Owned Reforested Land
 - 942 County Owned Reforested Land
- 960 Public Parks
 - 961 State Owned Public Parks, Recreation Areas, and Other Multiple Uses
 - 962 County Owned Public Parks and Recreation Areas
 - 963 City/Town/Village Public Parks and Recreation Areas
- 970 Other Wild or Conservation Lands
 - 971 Wetlands, Either Privately or Governmentally Owned, Subject to Specific Restrictions as to Use
- 980 Taxable State Owned Conservation Easements
- 990 Other Taxable State Land Assessments
 - 993 Transition Assessments for Taxable State Owned Land
 - 994 Transition Assessment for Exempt State Owned Land

Agriculture -

attribute code 8- symbol #69- lawn green**

- 105 Agricultural Vacant Land (Productive)
- 110 Livestock & Products
 - 111 Poultry & Poultry Products
 - 112 Dairy Products
 - 113 Cattle, Calves, Hogs
 - 114 Sheep & Wool
 - 115 Honey & Beeswax
 - 116 Other Livestock: donkeys, goats
 - 117 Horse Farms
- 120 Field Crops
 - 129 Acquired Development Rights
- 130 Truck Crops - Mucklands
- 140 Truck Crops - Not Mucklands
- 150 Orchard Crops
 - 151 Apples, Pears, Peaches, Cherries, etc.
 - 152 Vineyards
- 160 Other Fruits
- 170 Nursery & Greenhouse
- 180 Specialty Farms
 - 182 Pheasants

****The symbol # and color assigned to each land use category were selected from the shadeset of **Colornames** in ARC/INFO Ver 7.04.**

2001 EXISTING LAND USE INVENTORY

Long Island Sound Study - Suffolk County North Shore Watershed Management Program

Table 1. Land Use Classification System for Suffolk County (5 of 5)

Vacant -

attribute code 9- symbol #26- white**

- 310 Residential
 - 311 Residential Vacant Land
 - 313 Waterfront Vacant Lots
 - 314 Rural Vacant Lots #10 Acres
- 320 Rural
 - 321 Abandoned Agricultural Land
 - 322 Residential Vac. Land >10 A.
 - 323 Other Rural Vacant Lands
- 330 Vacant Land Located in Commercial Areas
- 340 Vacant Land Located in Industrial Areas
- 350 Urban Renewal or Slum Clearance
- 910 Private Wild & Forest Lands
 - 911 Forest Land
 - 912 Forest Land

Transportation -

attribute code 10- symbol #33- light grey**

- 650 Government
 - 651 Highway Garage
- 692 Roads, Streets, Highways & Parkways, Express or Otherwise including Adjoining Land
- 821 Flood Control
- 840 Transportation
 - 841 Motor Vehicle
 - 842 Ceiling Railroad
 - 843 Nonceiling Railroad
 - 844 Air
 - 846 Bridges, Tunnels & Subways

Utilities -

attribute code 11- symbol #31- lt. slate grey**

- 810 Electric & Gas
 - 812 Electric Power Generation - Coal Burning Plant
 - 813 Electric Power Generation - Oil Burning Plant
 - 814 Electric Power Generation - Nuclear Plant
 - 815 Electric Power Generation - Gas Burning Plant

816 Gas Generation Plant

817 Electric Transmission & Distribution

818 Gas Transmission & Distribution

820 Water

822 Water Supply

830 Communication

831 Telephone

832 Telegraph

833 Radio

834 TV other than Community Antenna T.V.

835 Community Antenna T.V.

836 Telecommunications

847 Pipelines (used by utility companies)

860 Special Franchise Property

861 Electric & Gas

862 Water

866 Telephone

867 Miscellaneous

868 Pipelines

869 Television

Waste Handling & Management -

attribute code 12- symbol #28- dk slate grey**

- 850 Waste Disposal
 - 851 Solid Wastes
 - 852 Landfills & Dumps
 - 853 Sewage Treatment & Water Pollution Control
 - 854 Air Pollution Control

Surface Waters -

attribute code 13- symbol #52- pale turquoise**

- 183 Aquatic: oysterlands
- 315 Underwater Vacant Land
- 845 Water (canal)
- 972 Land Under Water, Either Privately or Governmentally Owned

The symbol # and color assigned to each land use category were selected from the shadeset of **Colornames in ARC/INFO Ver 7.04.

Land Use Study Area Boundaries

The Long Island Sound - Suffolk County North Shore Watershed Program contains the following five priority watersheds which encompass areas within the jurisdiction of four incorporated towns and 11 incorporated villages:

Huntington-Northport Harbor Watershed (Town of Huntington; villages: Asharoken, Huntington Bay, Lloyd Harbor, Northport)

Nissequogue River Watershed (Towns of Smithtown and Islip; villages: Nissequogue, Head of the Harbor, the Branch)

Stony Brook Harbor Watershed (Towns of Smithtown and Brookhaven; villages: Nissequogue, Head of the Harbor, Old Field)

Port Jefferson Harbor Watershed (Town of Brookhaven; villages: Old Field, Poquott, Port Jefferson, Belle Terre)

Mt. Sinai Harbor Watershed (Town of Brookhaven; village: Port Jefferson)

The boundary of the regional watershed area subject to land use analysis is based on the areas contributing groundwater underflow to the north shore embayments/Long Island Sound and the location of the year 2000 U.S. Census blocks. The regional groundwater model output/information provided by the Suffolk County Department of Health Services (SCDHS) was used to estimate the areas contributing groundwater underflow to the north shore. The contributing area was defined using the location of the line delimiting the 25-year time of travel for groundwater to reach the coast (data file provided by Camp Dresser & McKee). This line was transferred to the Suffolk County Tax Map base. The boundaries of the blocks used in the 2000 U.S. Census were also overlain on the tax map base; these boundaries typically follow highways/roads, railroad lines, waterbody shorelines and municipal boundaries. The regional watershed study boundary was then drawn by using those Census block boundaries that best approximated the location of the 25-year time of travel line. This boundary *generally* includes all Census blocks that are located north of the 25-year line, as well as most blocks

that intersect the 25-year line. (Some blocks that intersect the line were not included if they encompassed large areas to the south of the line.)

Adjustment to this approach was needed in those instances that were identified where the 25-year line, as computed, does not accurately reflect the locations of freshwater streams and impoundments that are tributary to the harbors/bays. Those Census blocks that encompass such tributaries are included within the watershed study area. (For example, the 25-year travel time line in the Town of Smithtown did not encompass the Smithtown Greenbelt stream/Millers Pond, which is a surface water tributary to the Nissequogue River, about two miles in length. The watershed boundary was extended to include those blocks that encompass this tributary.) Note that there are five sewer districts along the north shore that are associated with a total of four sewage treatment discharges to marine surface waters (Huntington Town Sewer District) (Northport Village Sewer District) (S.C. District #6 - Kings Park) (S.C. District # 21 - Stony Brook and S.C. District # 1 - Port Jefferson). Sewer district boundaries were not a criterion used in determining the location of the watershed boundary.

The Long Island Sound - Suffolk County north shore watershed study area boundary, which encompasses all five of the previously mentioned priority watersheds, was approved by the SCDHS in May 2001. Upon approval, the Dept. of Planning initiated conduct of the existing land use inventory for all land located to the north of this boundary.

Preliminary boundaries separating each of the five priority watersheds remain to be determined by SCDHS/Camp Dresser & McKee through exercise of the Suffolk County groundwater model. (Depending upon needs of the project, it may be necessary to locate areas that drain to Long Island Sound proper, thus separating them from the harbor/bay watersheds.) The Dept. of Planning will adjust these "internal" boundaries based on Census block data, etc. after they are provided by SCDHS.

One overall base map has been used in this study. It shows the entire shoreline area within the Towns of Huntington and Smithtown, a small area at the headwaters of the Nissequogue River system in the Town

2001 EXISTING LAND USE INVENTORY

Long Island Sound Study - Suffolk County North Shore Watershed Management Program

of Islip, and that portion of the north shore in the Town of Brookhaven west of and including Mt. Sinai. It extends south to include all of the area within the regional watershed boundary. This base map was used to prepare the Existing Land Use map, as well as the yet to be prepared Land Available for Development map, developed in this project. All available watershed boundaries and town and village jurisdictions are shown on the base map.

Land Use Inventory Process

The following is a brief listing of the steps in the process used for conducting the inventory of existing land use.

- Update the SCPD line work coverage of the tax map to include the most recent parcel line work (new subdivisions, roads and reconsolidations) in order to be consistent with the way town tax assessor property code data is stored.
 - Using the GIS, combine tax map parcel line work with the three digit, tax assessor property code data and prepare a coverage at tax map scale for each town showing 13 general land use category attributes based on grouped assessor code data and residential density criteria.
 - Prepare large scale plots of all tax map sections located within each township. These plots show the land use attribute code numbers for the 13 general land use categories listed in Table 1, one of which is assigned to each tax map parcel.
 - Verify parcel attribute codes via field inspection, aerial photo interpretation, use of the Real Property Tax Service Agency property data and the tax records of the Suffolk County Treasurer's Office, and manually correct same where necessary on the tax map section plots.
 - Correct the GIS data base.
 - Merge the tax map section sheets and prepare preliminary, color-coded GIS existing land use maps for each township. Inspect and correct parcel line work and attribute codes, where needed.
- Plot final, color-coded existing land use maps at desired scale.
 - Use the GIS to tabulate acreage figures by general land use category, municipal jurisdiction and, if available, priority watershed boundary.

The steps in the process are conceptually simple. However, the level of effort required to prepare usable GIS coverages, verify and correct land use codes, and produce an accurate parcel-specific land use data base was quite substantial given the geographic extent of the area, the magnitude and complexity of the data bases involved, and the need to conduct extensive field verification.

Land Use Classification Conventions

Experience gained with the initial phases of the land use inventory and field check process resulted in the establishment of several conventions that were used to simplify and expedite the work, and help assure that land use code attributes were being assigned in a consistent manner by the several staff members involved. These conventions are summarized below.

- When more than one use was found to occur on a single parcel, the primary use of that parcel was determined and assigned to that parcel. Primary use is based on the relative intensity of the use in comparison with that of the other use(s) in question, with consideration also given to the areal extent of the use on the parcel. Typical examples follow:
 - A 100-acre parcel is used for both residential and agricultural purposes. Crops are grown on about 80 acres, 15 acres are in woodlands, and a house is located on site. Even though the parcel accommodates three uses (including vacant), it is assigned a classification of agriculture, since most of the parcel is dedicated to this use.
 - A two-story structure is located on a 10,000 sq. ft. lot in the retail portion of a central business district. A hardware store occupies the first story of the building and the second floor is used for an apartment. While used for both commercial and residential uses, this parcel is classified as commercial, given the relative intensity of the

uses in question and the prevailing nature of neighboring retail uses.

- A country estate is located on an 18-acre parcel, some of which is wooded, with the remainder used as pasture. This parcel is classified as low density residential, given the fact that it falls within the density criteria of ≤ 1 d.u./acre.

- A road right-of-way parcel traverses a bay, but the improved portion of the parcel does not extend over the water. The entire parcel is classified as transportation.

- Dedicated common areas on tax map parcels in condominium/townhouse projects were classified as recreation and open space, since such areas are not available for development in the future. Small, privately owned parcels that are the sites for residential structures in these projects were classified as high density residential.
- Agricultural land that had reverted to old field habitat due to non-use was classified as vacant. Actively cultivated lands and those recently left fallow were classified as agriculture.
- When structures on improved parcels are unoccupied, the parcels are not classified as vacant. They are classified according to the type of structure present, i.e., commercial, industrial, residential, etc.
- Whether a parcel is publicly owned or privately owned does not necessarily determine how that parcel is classified. For example, parcels classified as recreation and open space can be owned by property owners associations, private conservation groups, or private clubs, as well as public entities.
- Privately owned, commercially oriented, intensive recreational activities, such as bowling alleys and sports complexes, are classified as commercial.
- All publicly owned parks and conservation lands, whether actively or passively used, are classified as recreation and open space.
- Parcels owned by the Suffolk County Water

Authority were classified as utility, regardless of whether the parcels were improved or not.

- The existing zoning designation of a parcel is not a factor in how that parcel is classified as to existing land use.
- The number of residential structures on a parcel, as opposed to the number of dwelling units, was used in conjunction with parcel acreage to determine density, and hence, the classification of the parcel as low, medium or high density residential.
- The context within which a parcel is located, i.e., the uses found on adjacent and nearby parcels, can often help in making judgments in the field as to how to classify that parcel.
- Parcels that are adjacent to commercial uses in business districts and are used as parking lots in connection with these uses were classified as commercial. Parcels used for parking that are directly related to a nearby transportation use, e.g., ferry or railroad, were classified as transportation.

The tax map base shows property boundaries, and not geographical features, the extent of various "surface covers" or datums. Hence, the boundary of a parcel located on the shoreline may, or may not, coincide with the location of the land/sea interface. The apparent shoreline on the existing land use maps, i.e., the boundary between parcels classified as surface waters and adjacent parcels classified as one of the 12 upland land use categories, should not be interpreted as the water's edge or mean sea level, etc. Overlay of the tax map base on appropriate maps, such as USGS topographic maps, can indicate the extent to which the shorelines replicate each other.

A lake or pond located within a larger tax map parcel will not be shown on the existing land use map as surface waters. If the lake/pond is a separate parcel, i.e., the shoreline is a property boundary, then it will be classified and shown as surface waters on the map.

Existing Land Use Map Accuracy

The Existing Land Use map shows thousands of parcels, each assigned to a land use category. In

2001 EXISTING LAND USE INVENTORY

Long Island Sound Study - Suffolk County North Shore Watershed Management Program

evaluating the accuracy of this map, one has to consider two types of potential error. The first type is judgment error, resulting in the assignment of the wrong classification category to a particular parcel. The second type is attribute error, where the wrong classification is assigned to a parcel in the GIS data base, and this error is not detected in review of preliminary map. Given the extensive level of effort devoted to the land use inventory, the staff is confident that the incidence of both types of error is very low. Users of the Existing Land Use map and the acreage tabulations by land use category that are derived from the GIS data base should be aware of the methodology employed, so that proper interpretations can be made.

Further explanation may help to reduce confusion with respect to the differences between preliminary maps showing uses determined by assessor codes and the Existing Land Use map prepared by using the land use methodology described herein. Each municipality can assign assessor codes to parcels in different ways according to local practice. In almost all towns, it is evident that publicly owned parcels and other non-ratables often are not assigned any category. In addition, the assessor code data sets vary greatly by town in the extent and frequency of update. The use of this methodology and field verification assured

comparability of inventory results across municipal boundaries and their accuracy and suitability for planning purposes.

Another comment is warranted with respect to the relative accuracy of the acreage numbers in this report. The GIS calculates parcel area from digitized tax maps, which depict approximate parcel boundary locations. Original parcel surveys and/or deeds must be used to determine actual parcel location and acreage for purposes other than general land use inventory that require very accurate parcel data.

Time Frame

The staff conducted the field verification of land use for those portions of the Towns of Huntington and Smithtown within the study boundary in the fall and winter of 2001. For those portions of the Towns of Brookhaven and Islip within the study area boundary, field verification occurred in the summer and fall of 2002. For all intents and purposes, the pattern of land uses as portrayed on the Existing Land Use map should be considered as representative of 2001 conditions. This “snapshot” view of land use is, of course, static and will not reflect those incremental changes that have occurred as a result of more recent development activities.

RESULTS OF THE LAND USE INVENTORY

The results of the existing land use inventory are portrayed in map and numerical formats. The full color, GIS computer generated Existing Land Use map portrays the distribution of 13 land use categories as of 2001 within each of the four towns traversed by the Long Island Sound - Suffolk County north shore watershed boundary. The GIS was utilized to generate land use acreage data from the tax map parcel/land use data base. These data are grouped by land use category and local government jurisdiction.

Table 2 illustrates that the land area within the Long Island Sound - Suffolk County north shore

watershed boundary encompasses approximately 52,000 acres. There are over 48,000 real property tax map parcels within this study area. More than one half of the acreage in the Town of Smithtown and more than one third of the acreage in the Town of Huntington are within the study area boundary. The northwest corner of the Town of Brookhaven as well as a very small portion of the Town of Islip, containing the headwaters of the Nissequogue River, are also located within the study area boundary. The total upland acreage and number of real property tax map parcels by town are shown in Table 2. The town totals shown in both Table 2 and Table 3 include incorporated villages within the geographic boundaries of each town.

Table 2. Upland Acreage and Number of Parcels in Towns within the LIS-SC North Shore Watershed

	Huntington	Smithtown	Brookhaven	Islip	Total
Upland Acreage Town-wide	60,160	34,304	166,016	67,328	327,808
Upland Acreage in LIS-NS Watershed	20,362	18,461	12,744	410	51,977
% of Upland Acreage in LIS-NS Watershed	34%	54%	8%	0.6%	16%
Number of Parcels Town-wide	70,858	42,281	183,671	97,828	394,638
Number of Parcels in LIS-NS Watershed	19,013	15,643	13,072	313	48,041
% of Number of Parcels in LIS-NS Watershed	27%	37%	7%	0.3%	12%

2001 EXISTING LAND USE INVENTORY

Long Island Sound Study - Suffolk County North Shore Watershed Management Program

Table 3 is a summary of the upland acreage by land use category for each of the four towns traversed by the Long Island Sound - Suffolk County north shore watershed boundary. Residential development comprises 53% of the watershed acreage. Nearly one of every five acres within the study area is classified as recreation and open space. Ten percent of the study area has been assigned to the transportation category, which consists primarily of road and railroad right-of-ways. The commercial, industrial, agriculture, utilities, and waste handling and management categories account collectively for less than 5% of the study area acreage. Nearly 13% of the acreage in the watershed is evenly split between the institutional and vacant categories. The surface water category includes only freshwater bodies that are shown on the tax map as a separate parcel, i.e., the shoreline is a property boundary. A freshwater body contained within a larger

tax map parcel will not be shown on the existing land use map as surface waters. The acreage of the saltwater embayments is not included in the upland acreage figures for Tables 2 and 3. Several large underutilized parcels in the study area have significant redevelopment potential and/or are actively being pursued for redevelopment, such as the Gyrodyne property (± 320 acres in the Towns of Smithtown and Brookhaven), Kings Park State Hospital property (± 415 acres in the Town of Smithtown) and the Morgan Estate (± 460 acres in the Village of Asharoken). These properties and other underutilized parcels, along with vacant and agricultural lots (with development rights intact) will be the subject of further analysis in the future companion report on land available for development within the Long Island Sound - Suffolk County north shore watershed study area.

Table 3. Upland Land Use Acreage by Town for LIS-SC North Shore Watershed - 2001

	Huntington	Smithtown	Brookhaven	Islip	Total	Percent
Low density residential	7,316	4,630	2,817	24	14,787	28.5%
Medium density residential	3,415	4,198	3,854	134	11,601	22.3%
High density residential	571	218	234	0	1,023	2.0%
Commercial	324	295	274	10	903	1.7%
Industrial	34	185	36	0	255	0.5%
Institutional	776	1,028	1,390	141	3,335	6.4%
Recreation & open space	4,279	4,670	1,283	55	10,287	19.8%
Agriculture	86	197	96	0	379	0.7%
Vacant	1,290	1,053	953	1	3,297	6.3%
Transportation	1,833	1,910	1,621	39	5,403	10.4%
Utilities	416	53	171	6	646	1.2%
Waste handling and management	0	19	6	0	25	0.1%
Freshwater surface	22	5	9	0	36	0.1%
TOTAL	20,362	18,461	12,744	410	51,977	100.0%

REFERENCES

- New York State Division of Equalization and Assessment. 1991. Property Type Classification and Ownership Codes. Bureau of Local Assessment Services. Albany, NY.
- Long Island Regional Planning Board. 1982. Land use - 1981. Areawide 208 Waste Treatment Management Program. Hauppauge, NY.
- Nassau-Suffolk Regional Planning Board. 1968. Existing Land Use. Nassau-Suffolk Comprehensive Plan Series. Hauppauge, NY.
- Suffolk County Dept. of Planning. 1962. Existing Land Use. Hauppauge, NY.

2001 EXISTING LAND USE INVENTORY

Long Island Sound Study - Suffolk County North Shore Watershed Management Program

